

**Math 221: Basic Statistics Quiz #6A**

Week #12

**Name:** \_\_\_\_\_

SHOW ALL YOUR WORK FOR FULL CREDIT!

(1) Find the area under the **standard normal curve** that lies between  $z = -1.15$  and  $z = 2.02$ .

(2) A radar unit is used to measure the speed of automobiles on an expressway during rush hour traffic. The speeds of individual automobiles are normally distributed with a mean of 62 mph and a standard deviation of 5 mph. Find the probability that a random car will be travelling above 70 mph.

**Math 221: Basic Statistics Quiz #6B**

Week #12

**Name:** \_\_\_\_\_

SHOW ALL YOUR WORK FOR FULL CREDIT!

(1) Find the area under the **standard normal curve** that lies between  $z = -1.57$  and  $z = 0.92$ .

(2) A radar unit is used to measure the speed of automobiles on an expressway during rush hour traffic. The speeds of individual automobiles are normally distributed with a mean of 63 mph and a standard deviation of 4 mph. Find the probability that a random car will be travelling above 70 mph.

**Math 221: Basic Statistics Quiz #6C**

Week #12

**Name:** \_\_\_\_\_

SHOW ALL YOUR WORK FOR FULL CREDIT!

(1) Find the area under the **standard normal curve** that lies between  $z = -0.62$  and  $z = 2.88$ .

(2) A radar unit is used to measure the speed of automobiles on an expressway during rush hour traffic. The speeds of individual automobiles are normally distributed with a mean of 61 mph and a standard deviation of 8 mph. Find the probability that a random car will be travelling above 70 mph.

## Math 221: Basic Statistics I Quiz #6 Solutions

$$\begin{aligned} 1. \quad & P(-1.15 < Z < 2.02) \\ & = .3749 + .4783 = .8532 \end{aligned}$$

$$\begin{aligned} 2. \quad X & = 70 \\ Z & = \frac{70 - 62}{5} \\ & = 1.6 \\ & P(X > 70) \\ & = P(Z > 1.6) \\ & = .5 - .4452 = .0548. \end{aligned}$$

$$\begin{aligned} 1. \quad & P(-1.57 < Z < 0.92) \\ & = .4418 + .3212 = .7630 \end{aligned}$$

$$\begin{aligned} 2. \quad X & = 70 \\ Z & = \frac{70 - 63}{4} \\ & = 1.75 \\ & P(X > 70) \\ & = P(Z > 1.75) \\ & = .5 - .4599 = .0401. \end{aligned}$$

$$\begin{aligned} 1. \quad & P(-0.62 < Z < 2.88) \\ & = .2324 + .4980 = .7304 \end{aligned}$$

$$\begin{aligned} 2. \quad X & = 70 \\ Z & = \frac{70 - 61}{8} \\ & = 1.13 \\ & P(X > 70) \\ & = P(Z > 1.13) \\ & = .5 - .3708 = .1292. \end{aligned}$$